

it is not difficult to imagine that such cases occurred quite often, especially when, with the change of the climate, both birds and mammals spread more and more into the temperate regions where the spring movements of the grazing animals fell together with the bird's breeding time.

By a combination of favorable circumstances this new way of reproduction proved successful, and the parasitic offspring became more and more numerous. In the course of time the art of building nests was lost, the desire to incubate entirely gone, paternal and conjugal affection deadened, and parasitism had become a fixed habit.

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#### CURRENT NOTES ON PHYSIOGRAPHY.

##### THE BRANCH STREAMS OF THE SCHUYLKILL.

Miss F. BASCOM recently discussed 'the relation of the streams in the neighborhood of Philadelphia to the Bryn Mawr gravel' (*American Geologist*, XIX., 1897, 50-57), with the object of determining the disputed age of the gravels from the amount of work done by the branches of the Schuylkill since the gravels were laid down. Wissahickon, Valley and Gulf creeks are explained as of superposed origin, because they flow at certain points transversely through narrow gorges in resistant strata. This conclusion tacitly postulates the occurrence of only longitudinal (subsequent) branch streams in the Schuylkill district before the gravels were spread over the region; it remains to be proved whether so perfect an adjustment of branch streams to structures is necessary. It is entirely conceivable that, before the gravels were deposited, the Cretaceous peneplain had some transverse streams, although most of its drainage may have well become longitudinal. Whether the Wissahickon could have maintained a transverse course so near the Schuylkill through both the Cretaceous and

Tertiary cycles of denudation is certainly doubtful, but it has not been proved impossible. Gulf creek and its neighbors are so distinctly rectangular in pattern that adjustment and re-adjustment suffice to explain them without superposition. The elements of doubt and certainty are here so blended as to illustrate the dangers as well as the values of river analysis as a means of deciphering geological history.

#### HANN'S ALLGEMEINE ERDKUNDE.

THE *Allgemeine Erdkunde* of Hann, Hochsetter and Pokorny now reaches its fifth edition. The first part, treating the earth as a whole, the atmosphere and the hydrosphere being still prepared by Dr. Julius Hann (Vienna, Tempsky, 1896, 336 p., 24 colored plates and 92 figures), while volumes on the earth's crust and its forms by Brückner, and on the distribution of plants and animals by Kirchhoff, are promised for 1897. Hann's revised volume impresses one as a thorough work by a competent author, useful as a text for an advanced collegiate course, or as a reference book for advanced students. It is questionable whether various elementary facts, such as the obliquity of the ecliptic, the variation of the length of the day and its cause, and the weather-map facts as to cyclonic circulation, deserve a place in such a work; for any one who is competent to use the rest of the book should have been for some years familiar with these fundamentals. The more serious subjects may be inferred from a rapid review of the contents; the size and shape of the earth, and their consequences in the variation of gravity and the determination of positions; terrestrial magnetism and auroras; the atmosphere, its temperature, pressure, winds, moisture, rain and weather—with less attention to the origin of cyclones than would be welcome; the ocean, its depth, composition, temperature—this treated in much detail—

currents, waves and tides. The book may be strongly recommended for a professor's library.

#### THE GEOGRAPHICAL ASSOCIATION.

A NUMBER of English schoolmasters have formed a Geographical Association, 'to improve the teaching of Geography in secondary schools by adopting any methods that tend to the comprehension of geographical principles rather than the accumulation of isolated facts.' The prevalent backward condition of the study in England can be inferred from the publication of an essay on 'Geography as a school subject,' by the Hon. Secretary, B. B. Dickinson (Lawrence, Rugby, 1896), 'an attempt to show that geography can be taught as a training of the mind.' It is curious to note that the element of training, as far as it is illustrated in this essay, is almost entirely derived from a consideration of climate, and that no disciplinary value is assigned to the study of land forms themselves. The treatment of the winds, under climate, is unsatisfactory; for example: "It can be explained in simple language that one effect of [the earth's] rotation will cause the atmosphere to be heaped up relatively high over the equatorial regions and low over the poles, and that this would lead to a gradual increase in the atmospheric pressure on the surface of the earth as we proceed from the poles to the equator." Again: "The pupils should carefully note how gradual is the falling-off of the heat received in the first 45° [from the equator], and how rapid it becomes with greater obliquities." Both quotations contain errors of statement that are inconsistent with good training. On the other hand, the attempt to connect human conditions with physical conditions is admirable; so admirable, indeed, that it should be uniformly extended all through the study of geography with as much care as is here given to the chapter on climate.

#### NOTES.

'THE Missouri river and its utmost source' is the title of a book by J. V. Brower (St. Paul, 1896), already known by his studies of the source of the Mississippi. This newer volume contains a little in the way of observation on the ground, but it is confused with a quantity of irrelevant matter, both in text and illustration. The text has less of physiographic matter than might be inferred from the title.

PROFESSOR A. A. WRIGHT, of Oberlin, has recently addressed the Ohio Academy of Science on the importance of establishing a topographic survey of that State. The educational, as well as the technical, value of the survey is emphasized, and a joint undertaking with the U. S. Geological Survey is recommended. The Academy approved the plan and appointed a committee of three to secure favorable action by the next Legislature.

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#### CURRENT NOTES ON ANTHROPOLOGY.

##### THE GAME OF MANCALA.

THE value of games, both as marking distribution within certain areas and as illustrating analogous lines of independent development, has been a fruitful study in the hands of Mr. Stewart Culin, of the Museum of the University of Pennsylvania.

His latest contribution is entitled 'Mancala, the national game of Africa,' and appears in the last Report of the United States National Museum (pp. 10, with illustrations). He believes that "it marks the limits of Arab culture," or, rather influence, and was historically disseminated by the extension of this Semitic people. He describes the modes of playing it and comments on its historical spread. It seems to have been known for some years in the United States under the name 'chuba.'